

REMARKS

In view of the preceding amendments and the comments which follow, and pursuant to 37 C.F.R. § 1.111, amendment and reconsideration of the Office Action dated March 1, 2006, is respectfully requested by Applicant.

Summary

Claim 14 – 16 and 23 have been amended. No new matter has been added as a result of this amendment.

Claims 17 – 22 and 26 – 28 have been cancelled.

Specification

The Title has been amended to: A MANUFACTURING METHOD FOR A THIN FILM MAGNETIC HEAD.

Claim Objections

Claims 14 – 16 and 23 have been amended to correct minor informalities.

Claim Rejections

35 U.S.C. §103

Claims 19 and 28 were rejected under 35 U.S.C. 103(a) as being unpatentable over either Dill Jr. et al.(U.S. Patent 6, 226,149; "Dill"), Sasaki (U.S. Patent 6,195,872; "Sasaki"), or Fujisawa et al. (U.S. Patent 5,155,646; "Fujisawa"). Claim 23 was rejected under 35 U.S.C. 103(a) as being unpatentable over Dill in view of Hiner (U.S. Patent 6,032,353; "Hiner"). Claim 25 was rejected under 35 U.S.C. 103(a) as being unpatentable over Dill in view of Hong et al. (U.S. Patent 6,466,401; "Hong").

Claim 14 has been amended to include the features of Claim 18 and 19. Claim 14 recites, *inter alia*, depositing a recording portion composed of a lower magnetic pole layer, a gap layer, and an upper magnetic pole layer formed by continuous plating in that order from the bottom on a lower core layer. The gap layer is formed of a nonmagnetic metal material. The gap layer is one material or two or more different materials selected from among NiP, NiPd, NiW, NiMo, Au, Pt, Rh, Pd, Ru, and Cr. The arrangement of Claim 14 makes it possible to easily and accurately

form the recording portion without positional deviation in the narrow track width direction.

Dill fails to teach or suggest the arrangement of Claim 14. Dill teaches a write gap layer 210 composed of Al_2O_3 (Column 7, Lines 25 – 28). The arrangement in Dill is distinguishable from the arrangement of Claim 14 where the gap layer is formed of a nonmagnetic metal material. In addition, Dill fails to teach a recording portion composed of a lower magnetic pole layer, a gap layer, and an upper magnetic pole layer formed by continuous plating in that order from the bottom on a lower core layer. In fact, Dill teaches a contrary arrangement where the write gap layer 210 is in contact with the coil layer 214, write coil insulation layer 214, and the second pole tip 212 (Figure 9 and 27). This arrangement, disclosed in Dill, teaches away from the arrangement of Claim 14 because if a nonmagnetic metal layer is used for the gap layer, which is in direct contact with the coil layers, short-circuiting will occur. Thus, because the gap layer is in contact with the coil layer 214, the gap layer must be magnetic, which is contrary to the arrangement of Claim 14. Accordingly, Claim 14 is allowable over the cited art because Dill fails to teach all of the limitations of Claim 14.

Sasaki fails to teach or suggest the arrangement of Claim 14. Sasaki teaches a write gap layer 41 composed of alumina (Column 8, Lines 12 - 17). The arrangement in Sasaki is distinguishable from the arrangement of Claim 14 where the gap layer is formed of a nonmagnetic metal material. In addition, Sasaki fails to teach a recording portion composed of a lower magnetic pole layer, a gap layer, and an upper magnetic pole layer formed by continuous plating in that order from the bottom on a lower core layer. In fact, Sasaki teaches a contrary arrangement where the write gap layer 41 is in contact with a plurality of coil pieces 40. This arrangement, disclosed in Sasaki, teaches away from the arrangement of Claim 14 because if a nonmagnetic metal layer is used for the gap layer, which is in direct contact with the coil layers, short-circuiting will occur. Thus, because the gap layer is in contact with the plurality of coil pieces 40, the gap layer must be magnetic, which is contrary to the arrangement of Claim 14. Accordingly, Claim 14 is allowable over the cited art because Sasaki fails to teach all of the limitations of Claim 14.

Fujisawa fails to teach or suggest the arrangement of Claim 14. Fujisawa teaches an intermediate insulating layer 31b integrally formed with a magnetic gap 16 that is composed of an insulating material, such as SiO_2 , TiO_2 , Al_2O_3 , or WO_3

(Column 4, Lines 41 – 46). The arrangement in Fujisawa is distinguishable from the arrangement of Claim 14 where the gap layer is formed of a nonmagnetic metal material. In addition, Fujisawa fails to teach a recording portion composed of a lower magnetic pole layer, a gap layer, and an upper magnetic pole layer formed by continuous plating in that order from the bottom on a lower core layer. In fact, Fujisawa teaches a contrary arrangement where the intermediate insulating layer 31b is integrally formed with the magnetic gap 16 that is in contact with a plurality of coil pieces 19 (Figure 2F). This arrangement teaches away from the arrangement of Claim 14 because if a nonmagnetic metal layer is used for the gap layer, which is in direct contact with the coil layers, short-circuiting will occur. Thus, because the gap layer is in contact with the plurality of coil pieces 19, the gap layer must be magnetic, which is contrary to the arrangement of Claim 14. Accordingly, Claim 14 is allowable over the cited art because Fujisawa fails to teach all of the limitations of Claim 14.

Hiner and Hong fail to disclose the distinguishable features of Claim 14. Accordingly, Claim 14 is allowable over the cited art.

Dependent Claims 15 – 16 and 23 – 25 depend on an allowable claim and are thus allowable over the cited art.

35 U.S.C. §102

Claims 14, 17, 18, 20 – 22 and 24 were rejected under 35 U.S.C. 102(e) as being anticipated by Dill. Claims 14, 15, 17, 18, 20 – 22 and 24 were rejected under 35 U.S.C. 102(e) as being anticipated by Sasaki. Claims 14, 16, 26 and 27 were rejected under 35 U.S.C. 102 (b) as being anticipated by Fujisawa.

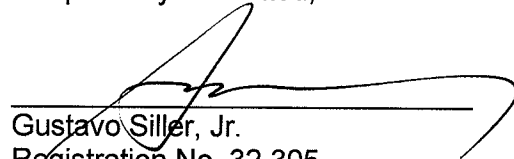
Claim 14 has been amended to include the distinguishable feature of Claim 19. The Examiner indicated that Claim 19 was not rejected under 35 U.S.C. 102 and thus Claim 14 is allowable for substantially the same reasons as stated above.

Accordingly, dependent Claims 15 and 23 – 25 depend on Claim 14 and are allowable.

Conclusion

Applicants respectfully submit that all of the pending claims are in condition for allowance and seek an early allowance thereof. If for any reason the Examiner is unable to allow the application in the next Office Action and believes that a telephone interview would be helpful to resolve any remaining issues, he is respectfully requested to contact the undersigned.

Respectfully submitted,



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